## **Supporting Information.**

## Facile Preparation of Multifunctional Biomaterials BTO/Ag and Their Applications in Photoelectrochemical Sensing, Photodegradation and Antibacterial Activities

Zhang Kexi<sup>a</sup>, Yan Bingdong<sup>b</sup>, Chen Delun<sup>a</sup>, Wang Xiaohong<sup>a</sup>, Cao Yang<sup>a,b</sup>, Zhang Xuewei<sup>a,\*</sup>, Hao Wanjun<sup>a,\*</sup>, Tu Jinchun<sup>a,\*</sup>

<sup>a</sup> College of Material Science and Engineering, Key Laboratory of Advanced Materials of Tropical Island Resources, Ministry of Education, Hainan University, Haikou 570228, China

<sup>b</sup> Key Laboratory of Child Cognition and Behavior Development of Hainan Province, Qiongtai Normal University, Haikou, 571100, China

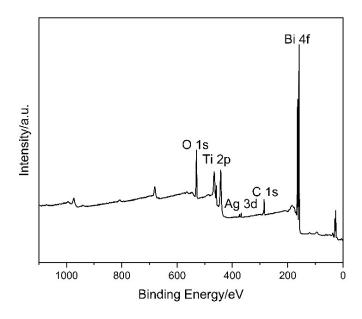
E-mail addresses:

zhangxuewei@hainanu.edu.cn (Zhang Xuewei);

hwi8899@hainanu.edu.cn (Hao Wanjun);

tujinchun@hainanu.edu.cn (Tu Jinchun).

<sup>\*</sup> Corresponding author



 $Figure \ S1 \ {\tt XPS} \ {\tt survey} \ {\tt spectra} \ {\tt of} \ {\tt BTO/Ag}$ 

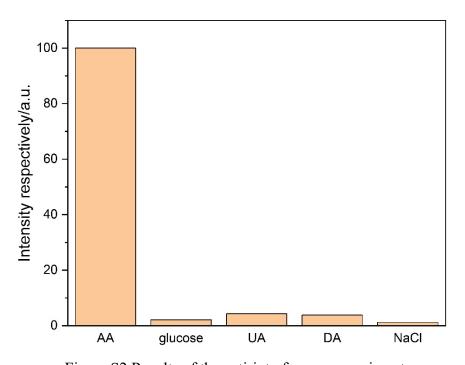


Figure S2 Results of the anti-interference experiment.

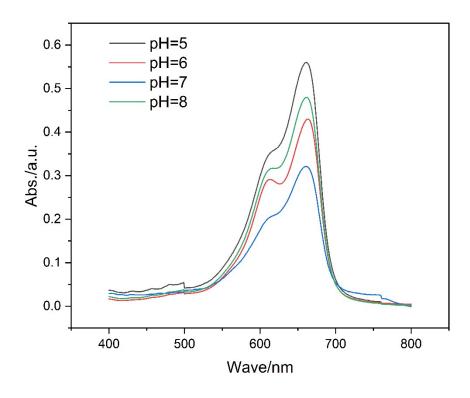


Figure S3 Photodegradation of MB under different pH values.

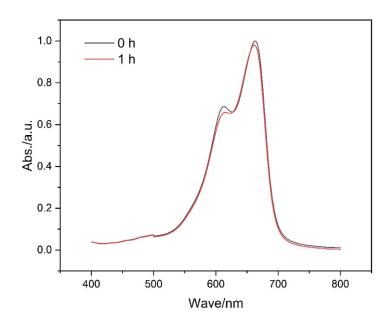


Figure S4 The impact of illumination on MB.

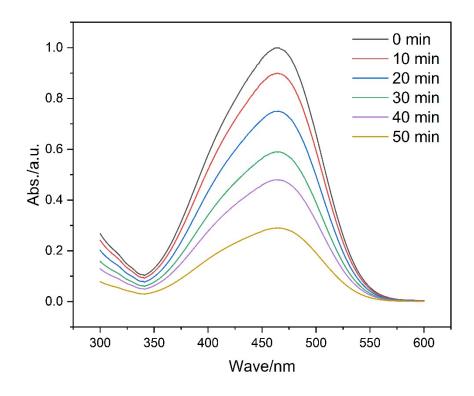


Figure S5 Photodegradation of methyl orange.

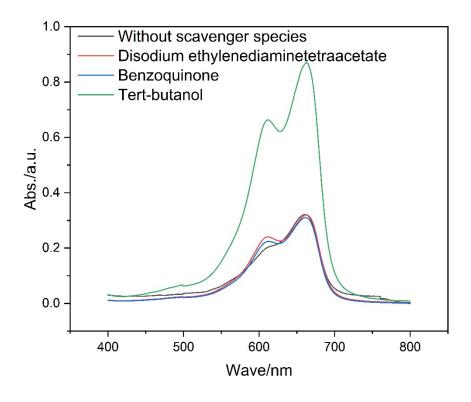


Figure S6 The effect of scavenger species on the photodegradation of MB.

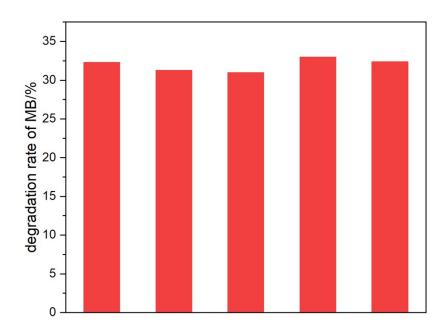


Figure S7 The results for individual recycling cycles toward the degradation rate of MB